

services,<sup>12</sup> both with circuit switches (a direct substitute for ILEC unbundled switching) and with VoIP (which makes circuit switching unnecessary). Such services are already available to more than 12 million of the 32 million households in Verizon's service territories.

- Carriers such as Vonage and AT&T are actively promoting voice communications using VoIP over customers' cable modem or DSL connections. Again, ILEC circuit switching is totally unnecessary to these offerings.
- Despite the dampening effect of aggressively attractive Commission-set UNE-P rates on investment by facilities-based CLECs (other than cable television carriers), CLECs have installed circuit switches that can reach customers throughout Verizon's metropolitan areas, and can now reach the large majority of Verizon's access lines in this way.<sup>13</sup>
- In addition to cable telephony, VoIP, and CLEC-supplied switches, wireless offerings increasingly compete directly with traditional wireline. While there is very little growth in wireline access lines overall and ILEC lines are declining at around 4 percent annually, wireless voice subscribership continues to grow. More important, an increasing percentage of local and long distance calling is

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<sup>12</sup> Verizon states that cable modem service is now available to at least 87 percent of U.S. households. *See UNE Fact Report 2004*, submitted by BellSouth, Qwest, SBC, and Verizon, WC-Docket 04-313, at A-2 (October 2004) ("*UNE Fact Report 2004*").

<sup>13</sup> Verizon reports that CLEC switches are being used to serve customers in wire centers that account for at least 86 percent of all BOC switched access lines. *UNE Fact Report 2004* at II-37.

made on wireless phones, and more and more customers view wireless as their primary phones, some of them having dropped wireline service altogether.<sup>14</sup>

9. The evidence assembled by Verizon clearly demonstrates that intermodal entry offers consumers the benefits of vigorous price competition. Cable television carriers and others using VoIP are offering some of the most attractive packages of voice communications services.<sup>15</sup> Of course, there is nothing new about the importance of competition as a source of price and product innovation, and the dynamic competition it promotes. That competition is, almost by definition, “intermodal.” In exemplifying this historical axiom, telecommunications has over the last decade had an experience very much like transportation, but really more intense. The most prominent promoters of trucking regulation, culminating in the Motor Carriers Act of 1935, were the railroads, which hoped in this way to curb the intense competition they had been encountering from those upstarts—competition that had been playing havoc with their highly differentiated rate structures, developed over the preceding half century. Correspondingly, the sudden and almost total deregulation of both surface and air transport, the virtual simultaneity of which—in the short span of 1975-1980—was far from coincidental, unleashed ubiquitous competition—of railroads with barges and trucking companies, of Federal Express—whose mode of operations would have been simply impossible under the previous regulatory regime—with United Parcel Service, of air with railroad passenger service, and now, in telecommunications, of email with both the Post Office and telephone-based facsimile

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<sup>14</sup> Verizon reports that, since the *Triennial Review*, the percentage of users who have given up wireline service for wireless service has grown from 3-5 percent to 7-8 percent. *UNE Fact Report 2004* at II-28.

<sup>15</sup> Verizon reports that packages offered by VoIP providers are typically priced 30 percent to 40 percent below comparable circuit-switched offerings. *Id.* at II-15.

service. None of that could have happened as rapidly or pervasively under continued regulation.

10. If a particular network element no longer satisfies the impairment standard of the Telecommunications Act, more strictly defined in compliance with the dictates of both the Circuit and Supreme Courts, it does not mean that wholesale markets for such components will fail to emerge. (Of course, the fact that some of these wholesale markets have already emerged is the reason those components no longer meet that impairment standard.) To the contrary, it is likely that an efficient amount of unbundling on the part of all facilities-based carriers (ILECs and CLECs alike) will develop without FCC compulsion. The economies of scale in the provision of many of their inputs gives those companies an incentive to offer them to other carriers, even if they are under no legal obligation to do so. The ILECs are in any event losing both customers and calling volumes to intermodal competitors. In these circumstances, while an incumbent would presumably prefer to keep the end user as its own customer and collect the resulting retail revenues, it clearly would rather collect the revenue generated by retaining the wholesale business than forfeit it entirely because the traffic ends up on the facilities of an intermodal competitor. As a result, once liberated from the artificial below-cost TELRIC-based rates, incumbents and CLECs alike would have an incentive to make mutually beneficial, voluntary wholesale arrangements at compensatory rates. Indeed, as Winston—author of the most comprehensive analyses of the effects of deregulation in the transportation industries—has observed, firms in the transportation industries, in contrast with the contentious experience in telecommunications under

regulation, have long been able to negotiate interconnection and other such mutually beneficial wholesale arrangements among themselves.<sup>16</sup>

11. Similar voluntary arrangements have been successfully negotiated in telecommunications as well since (and encouraged by) the Court's *USTA II* decision. For example, on August 25, 2004, Verizon announced execution of a commercial agreement with Granite Telecommunications that will replace existing UNE-P arrangements serving mass market (including small business) customers.<sup>17</sup> Likewise, Qwest and MCI and SBC and Sage have apparently entered into comprehensive wholesale agreements.<sup>18</sup>
12. Verizon's evidence also demonstrates widespread competition for high-capacity transport services throughout its major metropolitan markets.<sup>19</sup> While the concentration of traffic in areas such as downtown districts has for years provided opportunities for facilities-based competitive entry,<sup>20</sup> as we have already observed, competitors can and do extend their reach throughout such areas also by availing themselves of ILEC special access services, rather than relying on UNEs. As the D.C. Circuit admonished in *USTA II*, when competition already prevails under such circumstances,<sup>21</sup> competitors cannot be considered to be

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<sup>16</sup> Clifford Winston, "U.S. Industry Adjustment to Economic Deregulation," *The Journal of Economic Perspectives*, Vol. 12, No. 3 (Summer 1998), p. 105.

<sup>17</sup> See Verizon Press Release, *Verizon and Granite Sign Commercial Agreement for Wholesale Services*, Aug. 25, 2004.

<sup>18</sup> See MCI Press Release, *MCI and Qwest Reach Commercial Agreement for Wholesale Service*, May 31, 2004; SBC Press Release, *SBC, Sage Telecom Reach Wholesale Telecom Services Agreement*, April 3, 2004.

<sup>19</sup> *UNE Fact Report 2004* at III-1 to III-40.

<sup>20</sup> Verizon reports that more than 80 percent of its special access revenue is concentrated in approximately 12 percent of its wire centers, and that facilities-based competitors deploy high capacity facilities in a majority of them. *UNE Fact Report 2004* at III-8. Indeed, the original local exchange competitors, such as Teleport, entered such markets to take advantage of such opportunities.

<sup>21</sup> For example, the Court pointed out that the wireless industry has flourished under circumstances in which it uses special access to interconnect with ILEC networks, clearly demonstrating that it has not been impaired by the lack of access to UNEs.

“impaired” simply because they lack the additional advantage of obtaining ILEC facilities they already use at the even more attractive TELRIC prices.

13. Assessing whether or not it is economic for competitors to deploy facilities goes well beyond merely observing their current presence or absence. Rather, in a process similar to the one this Commission employs in assessing whether markets are sufficiently competitive to grant incumbent suppliers nondominant status, it is necessary also to determine whether competitors *could* economically expand their facilities—that is, whether their elasticity of supply is sufficient to constrain the incumbent’s prices. Therefore, consistently with the D.C. Circuit’s conclusion in *USTA II*, the geographic scope of competitive high capacity facilities extends well beyond the individual routes currently served. In particular, the areas in which competitive supply should be considered to be economic would include (1) ones into which it is economic for existing competitors to expand and (2) areas that are substantially similar to ones being served by CLECs elsewhere. Therefore, any snapshot of competitive high capacity services (facilities-based augmented by special access) actually being offered will provide a conservative measure of the geographic scope of the markets in which impairment could no longer be possible.

#### **GEOGRAPHIC MARKETS FOR ASSESSING IMPAIRMENT**

14. The impairment question is whether or not competitors can operate economically in the telecommunications markets they seek to enter without using certain ILEC UNEs, supplied at TELRIC rates. The information presented by Verizon demonstrates that in assessing impairment for high capacity network elements, the geographic scope of the relevant markets is at least as large as a metropolitan statistical area (MSA). The FCC has already

used this same market definition in cases involving requests for flexible pricing of high capacity services:

We will grant pricing flexibility relief for both Phase I and Phase II on an MSA basis. We agree with those commenters that maintain that MSAs best reflect the scope of competitive entry, and therefore are a logical basis for measuring the extent of competition.<sup>22</sup>

15. The same reasoning and recommendation applies to high-capacity transport UNEs.

Contrary to the Commission's earlier determination that individual routes constitute the geographic scope of high capacity services markets, the scope of competitive entry is much wider, for several reasons.<sup>23</sup> First, a route-by-route (or location-by-location) definition fails to consider how the presence of competing facilities at nearby locations constrains prices over a wider area. In particular, as the FCC's own *Pricing Flexibility Order* recognized, the fact that customers of high capacity transport services are other carriers and large businesses gives them bargaining power in negotiating with even single incumbents.<sup>24</sup> Such customers often purchase services at multiple locations (both within and across MSAs) and would be likely to bargain for similar terms at all of them. Second, an overly

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<sup>22</sup> Fifth Report and Order and Further Notice of Proposed Rulemaking, *In the Matter of Access Charge Reform, Price Cap Performance Review for Local Exchange Carriers, Interexchange Carrier Purchases of Switched Access Services Offered by Competitive Local Exchange Carriers, Petition of US WEST Communications, Inc. for Forbearance from Regulation as a Dominant Carrier in the Phoenix, Arizona MSA*, 14 FCC Rcd 14221 ¶ 72 (1999) ("*Pricing Flexibility Order*"). We recommended the same geographic scope in our evaluation of high capacity competition:

A practical delineation of the geographic scope of the market for high capacity facilities from the supply side is the metropolitan area. New entrants often announce the availability of their services on this basis. In addition, this tends to be the area within which a provider can expand in a timely fashion to offer services to a growing number of locations.

Alfred E. Kahn and Timothy J. Tardiff, "Economic Evaluation of High Capacity Competition in Phoenix," prepared for filing with the FCC on behalf of US WEST Communications, at 5. Petition of US WEST Communications for Forbearance from Regulation as a Dominant Carrier in the Phoenix, Arizona MSA (August 14, 1998).

<sup>23</sup> These reasons would apply even if the D.C. Circuit had not required the FCC to take into account the availability of special access.

<sup>24</sup> *Pricing Flexibility Order* ¶ 142.

granular geographic scope ignores the ways in which suppliers enter an area and offer high-capacity services. As the FCC recognized in its procedures for granting price flexibility for special access services, competitors enter on an MSA basis and, therefore, as Verizon has demonstrated, significant competitive investment within the MSA constrains the ILEC from supracompetitive pricing throughout it.<sup>25</sup> Third, considering each route or location as a separate market does not account for the possibility of firms expanding facilities on a basis other than building-by-building or route-by-route. Facilities-based competitors can and do expand into nearby locations (or routes) and/or, as the D.C. Circuit pointed out, enter areas similar to those in which competition is already occurring. Finally, the FCC's previous geographic market definition for transport services does not take into account the extraordinarily burdensome administrative costs of differentiating the mandatory availability of specific UNEs on a location-by-location basis. The FCC has itself acknowledged those difficulties when it declined to narrow the geographic scope for special access price flexibility to individual wire centers<sup>26</sup>

16. In the absence of intermodal competition, the same reasoning and recommendation as the FCC adduced in broadening the scope of permissible flexible pricing (par. 14, above) also would apply to unbundled mass market switching. CLECs have entered and are serving customers with their own switches in areas that account for the large majority of ILEC lines in Verizon's major MSAs. The FCC's precedent of aggregating consumers with similar

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<sup>25</sup> *Pricing Flexibility Order* ¶ 141.

<sup>26</sup> *Pricing Flexibility Order* ¶ 83.

choices into the same geographic market,<sup>27</sup> however, in conjunction with the emergence and proliferation of intermodal competitors, extends even farther the reach of the market in which firms competing against ILEC offerings operate. In particular, competitors offering VoIP services effectively extend similar choices to consumers almost ubiquitously. This outcome, in turn, implies the same national scope for assessing impairment for mass market switching that the FCC has repeatedly considered proper for defining the geographic scope of long-distance services.<sup>28</sup>

17. This concludes our declaration.

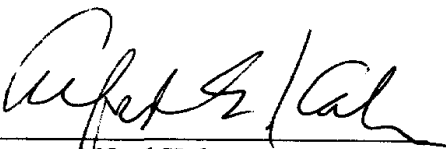
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<sup>27</sup> See, e.g., *In re Applications of NYNEX Corporation Transferor, and Bell Atlantic Corporation Transferee, for Consent to Transfer Control of NYNEX Corporation and its Subsidiaries*, File No. NSD-L-96-10, Memorandum Opinion and Order, ¶ 54 (rel. August 14, 1997).

<sup>28</sup> *In the Matter of Motion of AT&T Corp. to be Reclassified as a Non-Dominant Carrier*, Order (released October 23, 1995).

I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct.

Executed on October 2, 2004

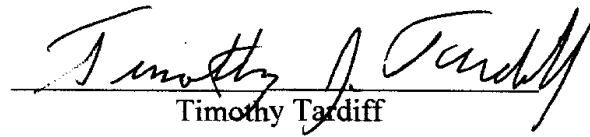


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Alfred Kahn

I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct.

Executed on October 2, 2004

  
Timothy Tardiff



DECLARATION OF ALFRED E. KAHN AND  
TIMOTHY J. TARDIFF

EXHIBIT 1

**ALFRED E. KAHN**

**BUSINESS ADDRESS:**

308 North Cayuga Street  
Ithaca, New York 14850  
Tel: (607) 277-3007  
Fax: (607) 277-1581  
E-mail: alfred.kahn@nera.com

Professor Kahn is the Robert Julius Thorne Professor of Political Economy, Emeritus, at Cornell University and a Special Consultant to NERA.

He has been Chairman of the New York Public Service Commission; Chairman of the Civil Aeronautics Board; and Advisor to the President (Carter) on Inflation and Chairman of the Council on Wage and Price Stability.

Professor Kahn received his Bachelor's (summa cum laude) and Master's degrees from New York University and a Doctorate in Economics from Yale University. Following service in the Army, he served as Chairman of the Department of Economics at Ripon College, Wisconsin. He moved to the Department of Economics at Cornell University, where he remained until he took leave to assume the Chairmanship of the New York Public Service Commission. During his tenure at Cornell, Professor Kahn served as Chairman of the Department of Economics, member of the Board of Trustees of the University and Dean of the College of Arts and Sciences.

Throughout his career, Professor Kahn has served on a variety of public and private boards and commissions including: the Attorney General's National Committee to Study the Antitrust Laws; the senior staff of the President's Council of Economic Advisors; the Economic Advisory Council of American Telephone & Telegraph Company; the National Academy of Sciences Advisory Review Committee on Sulfur Dioxide Emissions; the Environmental Advisory Committee of the Federal Energy Administration; the Public Advisory Board of the Electric Power Research Institute; the Board of Directors of the New York State Energy Research and Development Authority; the Executive Committee of the National Association of Regulatory Utility Commissioners; the National Commission for Review of Antitrust Laws and Procedures; the New York State Council on Fiscal and Economic Priorities; the Governor of New York's Fact-Finding Panel on Long Island Lighting Company's Nuclear Power Plant at Shoreham, L.I.; the Governor of New York's Advisory Committee on Public Power for Long Island; the National Governing Board of Common Cause; in 1990, as Chairman of the International Institute for Applied Systems Analysis Advisory Committee on Price Reform and Competition in the USSR; in 1999, Member of the National Academy of Sciences, National Research Council/Transportation Research Board Committee for a Study of Competition in the U.S. Airline Industry; and in 2000, Chair of the Blue Ribbon Panel to Study Pricing in the California Electricity Market.

He has also served as a court-appointed expert in *State of New York v. Kraft General Foods, Inc., et al.*, U.S. District Court, S.D.N.Y.; Advisor to New York Governor Carey on Telecommunications Policy; and as a consultant to the Attorneys General of New York, Pennsylvania and Illinois, the Ford Foundation, the National Commission on Food Marketing, Federal Trade Commission, Antitrust Division of the Department of Justice, the U.S. Department of Agriculture and the City of Denver on charging and financing of Stapleton Airport.

He has received L.L.D. honorary degrees from Colby College, Ripon College, Northwestern University, the University of Massachusetts and Colgate University, and an honorary D.H.L. from the State University of New York, Albany; he also received the Distinguished Transportation Research Award of the Transportation Board Forum, The Alumni Achievement Award of New York University, the award of the American Economic Association's Transportation and Public Utilities Group for Outstanding Contributions to Scholarship, The Henry Edward Salzberg Honorary Award from Syracuse University for Outstanding Achievement in the Field of Transportation, the Burton Gordon Feldman Award for Distinguished Public Service from Brandeis University, the Wilbur Cross Medal for outstanding achievement (Yale University), The 1997 L. Welch Pogue Award For Lifetime Contributions to Aviation, the 1997 Sovereign Fund Award Honoring Vision, Commitment and Achievement in the Pursuit of Individual Freedom, and the J. Rhoads Foster Award for achievements in economic regulation; and was elected to membership in the American Academy of Arts and Sciences and Vice President of the American Economic Association. He was for 15 years a regular commentator on PBS's "The Nightly Business Report."

He has testified before many U.S. Senate and House Committees, the Federal Power Commission, the Federal Energy Regulatory Commission and numerous state regulatory bodies.

Professor Kahn's publications include *Whom the Gods Would Destroy, or How Not to Deregulate; Letting Go: Deregulating the Process of Deregulation; Great Britain in the World Economy; Fair Competition: The Law and Economics of Antitrust Policy* (co-authored); *Integration and Competition in the Petroleum Industry* (co-authored); and *The Economics of Regulation*. He has written numerous articles which have appeared in *The American Economic Review, The Quarterly Journal of Economics, The Journal of Political Economy, Harvard Law Review, Yale Journal on Regulation, Yale Law Journal, Fortune, The Antitrust Bulletin* and *The Economist*, among others.

**EDUCATION:**

YALE UNIVERSITY  
Ph.D., Economics, 1942  
  
UNIVERSITY OF MISSOURI  
Graduate Study, 1937-1938  
  
NEW YORK UNIVERSITY  
M.A., Economics, 1937  
A.B. (summa cum laude), Economics, 1936

**EMPLOYMENT:**

1961-1974      NATIONAL ECONOMIC RESEARCH ASSOCIATES, INC.  
1980-          Special Consultant  
  
CORNELL UNIVERSITY  
1947-1989      Assistant Professor; Associate Professor; Robert Julius Thorne Professor of  
Economics; Robert Julius Thorne Professor of Political Economy, Emeritus,  
1989-; Chairman, Department of Economics; Dean, College of Arts and  
Sciences; on leave 1974-80.  
  
NEW YORK UNIVERSITY SCHOOL OF LAW  
Spring 1989      Visiting Meyer Professor of Law  
  
UNITED STATES GOVERNMENT  
1978-1980      Advisor on Inflation to President Carter  
1978-1980      Chairman, Council on Wage and Price Stability  
1977-1978      Chairman, Civil Aeronautics Board  
1955-1957      Senior Staff, Council of Economic Advisors to the President  
1943          U.S. Army, Private  
1943          War Production Board  
1942          Associate Economist, International Economics Unit, Bureau of Foreign and  
Domestic Commerce, Department of Commerce  
1941-1942      Associate Economist, Antitrust Division, U.S. Department of Justice  
  
NEW YORK STATE PUBLIC SERVICE COMMISSION  
1974-1977      Chairman  
  
BROOKINGS INSTITUTION  
1940,  
1950-1951      Staff Economist  
  
RIPON COLLEGE  
1945-1947      Assistant Professor, Chairman, Department of Economics  
  
TWENTIETH CENTURY FUND  
1944-1945      Research Economist  
  
COMMISSION ON PALESTINE SURVEYS  
1943-1944      Economist  
  
UNIVERSITY OF MISSOURI

1937-1938        Teaching Assistant

**CONSULTANCIES AND PROFESSIONAL ACTIVITIES:**

1994-1995        Antitrust Division, U.S. Department of Justice, on the application of Ameritech for waivers of the interexchange restrictions in the AT&T Modified Final Judgment  
1994              American Airlines on code-sharing  
1993-1994        Court-appointed expert in State of New York v. Kraft General Foods, Inc., et al., U.S. District Court, S.D.N.Y.  
1992              New Zealand Telecom on the progress of competition in New Zealand telecommunications  
1992              Rochester Telephone Company on corporate restructuring and deregulation  
1992              Russian Government on economic reform  
1991              British Mercury on terms of competition with British Telecom  
1989              City of Denver on charging and financing of Stapleton Airport  
1988-1990        Attorneys General, New York and Pennsylvania, on airline mergers  
1985              Attorney General, State of Illinois, on Illinois Bell rates  
1981-1984        City of Long Beach, California, the Coca-Cola Company and American Airlines on antitrust litigation  
1981-1997        Economic commentary, Nightly Business Report (PBS)  
1980-1982        Advisor to Governor Carey on Telecommunications Policy  
1968              Ford Foundation  
1966              National Commission on Food Marketing  
1965, 1974        Federal Trade Commission  
1963-1964        Antitrust Division, Department of Justice  
1960-1961        U.S. Department of Agriculture  
1957-1961        Boni Watkins, Jason & Co.  
See also the list of testimony below.

**MEMBERSHIPS:**

2000             Chairman, Blue Ribbon Panel to Study Pricing in the California Electricity Market  
1998-1999        Member, Committee for a Study of Competition in the U.S. Airline Industry, National Research Council/Transportation Research Board, National Academy of Sciences  
1992-1994        Member, New York State Telecommunications Exchange  
1992-1993        Member, Ohio Blue Ribbon Panel on Telecommunications Regulation  
1991-             Board of Editors, *Review of Industrial Organization*  
1990-1992        Chairman, International Institute for Applied Systems Analysis Advisory Committee on Price Reform and Competition in the USSR  
1986              Governor Cuomo's Advisory Panel on public power for Long Island  
1983-1989        Governor Cuomo's Fact-finding Panel on Long Island Lighting Company's Nuclear Power Plant at Shoreham, L.I.  
1983-1990        New York State Council on Fiscal and Economic Priorities

1982-	<i>The American Heritage Dictionary</i> Usage Panel
1982-1985	Governing Board, Common Cause
1980-1986	Director, New York Airlines
1978-1979	National Commission for the Review of Antitrust Laws and Procedures
1975-1977	Project Committee, Electric Utility Rate Design Study, Electric Power Research Institute
1974-1975	National Academy of Science Review Commission on Sulfur Oxide Emissions
1974-1977	Public Advisory Board, Electric Power Research Institute
1974-1977	Environmental Advisory Committee, Federal Energy Administration
1974-1977	Executive Committee, National Association of Regulatory Utility Commissioners, and Chairman, Committee on Electric Energy
1968-1974	Economic Advisory Board, American Telephone & Telegraph Corporation
1965-1967	Economic Advisory Committee, U.S. Chamber of Commerce
1967-1969	Chairman, Tompkins County Economic Opportunity Corporation
1964-1969	Board of Trustees, Cornell University
1961-1964	Board of Editors, <i>American Economic Review</i>
1953-1955	Attorney General's National Committee to Study the Antitrust Laws

#### HONORS AND AWARDS:

Dec 1999	AEI-Brookings Joint Center for Regulatory Studies First Distinguished Lecturer
Apr 1999	J. Rhoads Foster Award for achievements in economic regulation
Jan 1998	Recipient of the 1997 Sovereign Fund Award "Honoring Vision, Commitment and Achievement in the Pursuit of Individual Freedom"
Dec 1997	The 1997 L. Welch Pogue Award For Lifetime Contributions to Aviation
May 1995	Wilbur Cross Medal for outstanding achievement, Yale University
Mar 1989	Burton Gordon Feldman Award for Distinguished Public Service, Gordon Public Policy Center, Brandeis University
Feb 1989	Distinguished Service Award, Public Utility Research Center, University of Florida
Nov 1988	International Film and TV Festival of New York, Bronze Medal presented to The Nightly Business Report/WPBT2 for Editorial/Opinion Series written by Alfred E. Kahn
Apr 1986	Harry E. Salzberg 1986 Honorary Medallion for outstanding achievement in the field of transportation
Oct 1984	Distinguished Transportation Research Award of the Transportation Research Forum
1981-1982	Vice President, American Economic Association
1978	Richard T. Ely lecturer, American Economic Association, 1978
1978	Rejection Scroll, International Association of Professional Bureaucrats
May 1985	State University of New York (Albany), DHL (Hon.)
May 1983	Colgate University, LL.D. (Hon.)
June 1982	Northwestern University, LL.D. (Hon.)
May 1980	Ripon College, LL.D. (Hon.)
May 1979	University of Massachusetts, LL.D. (Hon.)
May 1978	Colby College, LL.D. (Hon.)
1977-	Fellow of the American Academy of Arts and Sciences
1976	Distinguished Alumni Award, New York University

1976	American Economic Association, Section on Public Utilities and Transportation, citation for distinguished contributions
1954-1955	Fulbright Fellowship, Italy
1935-	Phi Beta Kappa
1939-1940	Yale-Brookings Fellow

## BOOKS:

*Lessons from Deregulation: Telecommunications and Airlines after the Crunch*, AEI-Brookings Joint Center for Regulatory Studies, November 2003.

*Whom the Gods Would Destroy, or How Not to Deregulate*, AEI-Brookings Joint Center for Regulatory Studies, May 2001.

*Letting Go: Deregulating the Process of Deregulation*, Michigan State University Institute of Public Utilities, July 1998.

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## MAJOR ARTICLES:

"The Deregulatory Tar Baby: The Precarious Balance Between Regulation and Deregulation, 1970-2000 and Henceforward," *Journal of Regulatory Economics*, 21:1, January 2002, pp. 35-56.

"Enhancing Competition for Broadband Services: The Case for Removing the Prohibition Against High-Speed InterLATA Transmission by Regional Bell Operating Companies" (with Timothy J. Tardiff), prepared for the United States Telecom Association, May 22, 2000.

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"Deregulation: Micromanaging the Entry and Survival of Competitors," Edison Electric Institute, February 1998.

"Competition and Stranded Costs Re-Revisited," 37:1 *Natural Resources Journal*, Winter 1997, pp. 29-42.

"How to Treat the Costs of Shared Voice and Video Networks in a Post-regulatory Age," *Policy Analysis*, #264, November 27, 1996, Cato Institute.

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"The Challenge for Federal and State Regulators: Transition from Regulation to Efficient Competition in Electric Power" (with William J. Baumol and Paul L. Joskow), Edison Electric Institute, December 9, 1994.

"Competition in the Electric Industry Is Inevitable and Desirable," *The Electric Industry in Transition*, Public Utility Reports, Inc. and New York State Energy Research and Development Authority, December 1994, Chapter 3, pp. 21-31.

"Can Regulation and Competition Coexist? Solutions to the Stranded Cost Problem and Other Conundra," *The Electricity Journal*, Volume 7, Number 8, October 1994, pp. 23-35.

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## **TESTIMONY BEFORE THE FEDERAL POWER COMMISSION, 1958-62**

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